Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Long-stay nursing home care: percent of residents assessed and appropriately given the pneumococcal vaccine.

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percent of long-stay residents whose pneumococcal vaccine status is up-to-date.

Rationale

According to the Centers for Disease Control and Prevention (CDC) (1997), pneumococcal disease kills more people in the United States each year than all other vaccine-preventable diseases combined. Older people and persons with chronic health conditions are at high risk for pneumococcal disease. However, estimated pneumococcal vaccination coverage remains below 50% in recommended high risk groups (National Health Interview Survey, 2006). Vaccinations of nursing facility residents can prevent or lower the risk of residents becoming seriously ill. Healthy People 2010 includes Objective 14-29f, for institutionalized adults, of a 90% vaccination rate in 2010 (Office of Disease Prevention and Health Promotion [ODPHP], 2000).

Hospitalization rates for pneumonia-related stays for the elderly population have been increasing over the past 15 years, and among those 85 and older, at least 1 in 20 elderly persons were hospitalized each year because of pneumonia (Fry et al., 2005). In 2005, Medicare paid an average of $6,342 per hospital discharge for pneumonia-related short-stay hospitalizations; the average length of stay was 6.1 days. The number of Medicare reimbursed discharges for the same year was 670,000 (Health Care Financing Review, 2007).

In an analysis of quality measures using MDS data from the first quarter (Q1) of 2006 for a random 10% facility sample, the University of Colorado found that this measure had a significant amount of variability across facilities. The quality measure varied from 10.7% at the 10th percentile to 100% at the 90th percentile. In addition, 13.8% of facilities had 100% vaccination (Brega et al., 2008).

This measure is intended to encourage nursing facilities to focus on this important aspect of clinical care by assessing residents on the status of their pneumococcal vaccine immunization and to provide immunization as appropriate.

Evidence for Rationale

Brega A, Goodrich G, Nuccio E, Hittle D. Transition of publicly reported nursing home quality measures to MDS 3.0-draft. Denver (CO): Division of Health Care Policy and Research University of Colorado at Denver; 2008.

Centers for Disease Control and Prevention (CDC). Pneumococcal polysaccharide vaccine. What you need to know. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 1997.

Fry AM, Shay DK, Holman RC, Curns AT, Anderson LJ. Trends in hospitalizations for pneumonia among persons aged 65 years or older in the United States, 1988-2002. JAMA. 2005 Dec 7;294(21):2712-9. PubMed

Health Care Financing Review. Statistical supplement 293. Baltimore (MD): Centers for Medicare and Medicaid Services; 2007.

National Health Interview Survey. Pneumococcal: self-reported pneumococcal vaccination coverage trends 1989-2006. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2006.

National Quality Forum measure information: percent of residents assessed and appropriately given the pneumococcal vaccine (long stay). Washington (DC): National Quality Forum (NQF); 2016 Jan 13. 11 p.

Office of Disease Prevention and Health Promotion (ODPHP). Healthy people 2010. [internet]. Washington (DC): U.S. Department of Health and Human Services (HHS); 2000.

Primary Health Components

Nursing home; long-stay; pneumococcal vaccine

Denominator Description

All long-stay residents with a selected target assessment (see the related "Denominator Inclusions and Exclusions" field)

Numerator Description

Residents meeting any of the following criteria on the selected target assessment:

Have an up-to-date pneumococcal vaccine status; *or*
Were offered and declined the vaccine; *or*
Were ineligible due to medical contraindication(s) (e.g., anaphylactic hypersensitivity to components of the vaccine; bone marrow transplant within the past 12 months; or receiving a course of chemotherapy within the past two weeks).

See the related "Numerator Inclusions/Exclusions" field.

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

- In 2004, the seventh most common cause of death for persons aged 65 and older in the United States was pneumonia and influenza (Gorina et al., 2008). Death related to pneumonia affects the elderly at a higher rate, especially for those aged 85 and older (Thompson et al., 2003). Almost 60,000 deaths in 2004 were caused by influenza and pneumonia, and more than 85% of those were for the elderly (Gorina et al., 2008). Frail elderly are especially at risk for contracting pneumonia as a complication of another infection or medical condition. In the same year, there were approximately 123,000 deaths with influenza and pneumonia mentioned on the death certificate as a secondary cause of death (Gorina et al., 2008).
- Racial segregation between nursing homes has been shown to be a major factor in racial disparities in the nursing home population, primarily for blacks. In 2000, a study drawing on national Minimum Data Set (MDS) and Online Survey, Certification, and Reporting (OSCAR) data found that two-thirds of all black residents were living in just 10% of all facilities (Smith et al., 2007). A 2002 survey of a stratified sample of 39 nursing homes and 181 residential care/assisted-living facilities in four states had similar findings (Howard et al., 2002). Facilities serving blacks have demonstrated a lower level of quality care than those serving whites with lower staff-to-resident ratios and higher deficiency ratings (Grabowski, 2004). Minority groups, in general, and blacks, in particular, have also had more limited access to nursing home care than whites (National Center for Health Statistics [NCHS], Centers for Disease Control and Prevention [CDC], 1997).
  Pneumococcal vaccination rates are lower for black nursing home residents than for white residents—31% of black residents compared with 24% of white residents aged 65 years or older had never received a pneumococcal vaccination. Blacks also had higher odds of unknown vaccination status than whites in Medicaid-only facilities and lower odds of unknown status in government owned facilities. The racial difference in pneumococcal vaccination exists predominantly in certain facility types (Marsteller et al., 2008).

Evidence for Additional Information Supporting Need for the Measure

Gorina Y, Kelly T, Lubitz J, Hines Z. Trends in influenza and pneumonia among older persons in the United States. Hyattsville (MD): Centers for Disease Control and Prevention (CDC), National Center for Health Statistics; 2008.

Grabowski DC. The admission of blacks to high-deficiency nursing homes. Med Care. 2004 May;42(5):456-64. PubMed

Howard DL, Sloane PD, Zimmerman S, Eckert JK, Walsh JF, Buie VC, Taylor PJ, Koch GG. Distribution of African Americans in residential care/assisted living and nursing homes: more evidence of racial disparity. Am J Public Health. 2002 Aug;92(8):1272-7. PubMed

Marsteller JA, Tiggle RB, Remsburg RE, Bardenheier B, Shefer A, Han B. Pneumococcal vaccination in nursing homes: does race make a difference. J Am Med Dir Assoc. 2008 Nov;9(9):641-7. PubMed

National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC). Health, United States 1996-97 and injury chartbook. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 1997. 341 p.

National Quality Forum measure information: percent of residents assessed and appropriately given the pneumococcal vaccine (long stay). Washington (DC): National Quality Forum (NQF); 2016 Jan 13. 11 p.

Smith DB, Feng Z, Fennell ML, Zinn JS, Mor V. Separate and unequal: racial segregation and disparities in quality across U.S. nursing homes. Health Aff (Millwood). 2007 Sep-Oct;26(5):1448-58. PubMed

Thompson WW, Shay DK, Weintraub E, Brammer L, Cox N, Anderson LJ, Fukuda K. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA. 2003 Jan 8;289(2):179-86. PubMed

Extent of Measure Testing

A joint RAND/Harvard team engaged in a deliberate iterative process to incorporate provider and consumer input, expert consultation, scientific advances in clinical knowledge about screening and assessment, Centers for Medicare & Medicaid Services (CMS) experience, and intensive item development and testing by a national Veteran's Health Administration (VHA) consortium. This process allowed the final national testing of Minimum Data Set (MDS) 3.0 to include well-developed and tested items.

The national validation and evaluation of the MDS 3.0 included 71 community nursing homes (NHs) (3,822 residents) and 19 VHA NHs (764 residents), regionally distributed throughout the United States. The evaluation was designed to test and analyze inter-rater agreement (reliability) between gold-standard (research) nurses and between facility and gold-standard nurses, validity of key sections, response rates for interview items, anonymous feedback on changes from participating nurses, and time to complete the MDS assessment.

Analysis of the test results showed that MDS 3.0 items had either excellent or very good reliability even when comparing research nurse to facility-nurse assessment. In most instances these were higher than those seen in the past with MDS 2.0. In addition, for the cognitive, mood and behavior items, national testing included collection of independent criterion or gold-standard measures. These MDS 3.0 sections were more highly matched to criterion measures than were MDS 2.0 items.

Improvements incorporated in MDS 3.0 produced a more efficient assessment: better quality information was obtained in less time. Such gains should improve identification of resident needs and enhance resident-focused care planning. In addition, including items recognized in other care settings is likely to enhance communication among providers. These significant gains reflect the cumulative effect of changes

across the tool, including use of more valid items, direct inclusion of resident reports, improved clarity of retained items, deletion of poorly performing items, form redesign, and briefer assessment periods for clinical items.

Refer to *Development & Validation of a Revised Nursing Home Assessment Tool: MDS 3.0.* for additional information.

Evidence for Extent of Measure Testing

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Age greater than or equal to 5 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

12-month reporting period

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Institutionalization

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All long-stay* residents with a selected target assessment

*Long-stay: An episode with cumulative days in facility (CDIF) greater than or equal to 101 days as of the end of the target period.

Exclusions
Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Residents meeting any of the following criteria on the selected target assessment:

> Have an up-to-date pneumococcal vaccine status; *or*
> Were offered and declined the vaccine; *or*
> Were ineligible due to medical contraindication(s) (e.g., anaphylactic hypersensitivity to components of the vaccine; bone marrow transplant within the past 12 months; or receiving a course of chemotherapy within the past two weeks).

Note: Refer to the original measure documentation for details.

Exclusions
Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Center for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS) - Resident Assessment Instrument (Version 3.0)

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percent of residents assessed and appropriately given the pneumococcal vaccine (long-stay).

Measure Collection Name

Nursing Home Quality Initiative Measures

Measure Set Name

Long-stay Quality Measures

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

RTI International - Nonprofit Research Organization

Funding Source(s)

United States (U.S.) Government

Composition of the Group that Developed the Measure

United States (U.S.) Government Staff, Clinical Experts, Researchers, and Statisticians

Financial Disclosures/Other Potential Conflicts of Interest

No conflicts of interest exist.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2014 Jan 6

Measure Initiative(s)

Nursing Home Compare

Adaptation

This measure was adapted from the following source:

> Influenza vaccination for all nursing home residents and pneumococcal vaccination of residents age 65 or older (Centers for Disease Control and Prevention [CDC])

Date of Most Current Version in NQMC

2015 Oct

Measure Maintenance

Annual and (every three years) endorsement

Date of Next Anticipated Revision

Quarter 2 2016

Measure Status

This is the current release of the measure.

This measure updates a previous version: RTI International. MDS 3.0 quality measures user's manual. v8.0. Baltimore (MD): Center for Medicare & Medicaid Services (CMS); 2013 Apr 15. 80 p.

Measure Availability

Source available from the Centers for Medicare & Medicaid Services (CMS) Web site.

For more information, refer to the CMS Web site at www.cms.gov.

Companion Documents

The following are available:

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p. Available from the Centers for Medicare & Medicaid Services (CMS) Web site.

Nursing Home Compare. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS). 2000- [updated 2012 Nov 15]; [cited 2012 Nov 27]. This tool is available from the Medicare Web site.

NQMC Status

This NQMC summary was completed by ECRI Institute on December 11, 2007. The information was verified by the Colorado Foundation for Medical Care, under contract with CMS on December 11, 2007.

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This NQMC summary was updated by ECRI Institute on August 15, 2013. The information was verified by the measure developer on December 3, 2013.

This NQMC summary was updated again by ECRI Institute on May 31, 2016. The information was not verified by the measure developer.

Copyright Statement

Production

Source(s)

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